

**TOTAL AIR TEMPERATURE PROBE PROVIDING
IMPROVED ANTI-ICING PERFORMANCE AND REDUCED
DEICING HEATER ERROR**

ABSTRACT OF THE DISCLOSURE

5 A total air temperature (TAT) probe for
measuring TAT includes an inlet scoop which receives
airflow from free stream airflow moving toward the
inlet scoop from a first direction. A first portion
of the airflow entering the inlet scoop exits the
10 probe through a main exit channel. A second portion
of the airflow enters a TAT sensor flow passage,
which extends longitudinally along an axis. This axis
is oriented to form an angle of less than 90 degrees
with the first direction from which the free stream
15 airflow moves toward the inlet scoop. A sensor
assembly extends longitudinally in the sensor flow
passage and measures a total air temperature of airflow
through the sensor flow passage. By increasing the
angle through which the internal air turns, better
20 inertial extraction of ice and water particles is
realized. As a result, sensor clogging from accreted
ice is significantly reduced. A second improvement is
achieved by repositioning the sensor element to be
more in-line with the internal airflow direction.
25 This helps lower DHE by minimizing heated boundary
layer spillage onto the sensing element.